

WHAT IS CLAIMED IS:

1. An optoelectronic device selected from one of an optoelectronic transceiver, an optoelectronic transmitter and an optoelectronic receiver, the device comprising:
 - a first interface configured to receive a first data stream that comprises data packets;
 - a circuit that identifies data packets in the first data stream having a packet destination address matching a predefined address assigned to the optoelectronic device and modifies the first data stream to generate a second data stream, the second data stream including at least a subset of the data packets in the first data stream;
 - the circuit further configured to perform operations according to information in the identified packets; and
 - a second interface configured to output the second data stream.
2. The optoelectronic device of claim 1, wherein the circuit replaces the identified data packets in the first data stream with link idle symbols to generate the second data stream.
3. The optoelectronic device of claim 1, wherein the circuit inserts data packets into the first data stream to generate the second data stream, the inserted data packets each having a destination address.
4. The optoelectronic device of claim 1, further comprising a sensor coupled to the circuit and configured to detect a status of the optoelectronic device and to generate a corresponding sensor signal, wherein the circuit is configured to generate at least one new data packet containing information associated with the corresponding sensor signal, and wherein at least one data packet of the second data stream contains information associated with the sensor signal.
5. The optoelectronic device of claim 1, wherein the circuit is configured to alter an operation parameter of the optoelectronic device in response to the information.
6. The optoelectronic device of claim 1, wherein the circuit is configured to be programmable by instructions contained in the identified data packets.
7. The optoelectronic device of claim 1, wherein the optoelectronic device is configured to couple to a host to receive the first data stream and wherein the optoelectronic device further comprises a local module input/output interface for communicating with another optoelectronic device coupled to said host.

8. An optoelectronic device selected from one of an optoelectronic transceiver and an optoelectronic transmitter, the device comprising:

a first interface configured to couple to a host device to receive a first data stream that includes data packets;

a sensor configured to detect a status of the optoelectronic device and to generate a sensor signal representative of the status;

a circuit coupled to the first interface and to the sensor, the circuit configured to identify a data packet in the first data stream having a packet destination address matching a predefined address assigned to the optoelectronic device, to generate a new data packet that includes information associated with the sensor signal in response to the identified data packet, and to generate a second data stream that includes at least a subset of the data packets in the first data stream;

an optical subassembly configured to convert the second data stream into an optical signal; and

a second interface configured to couple the optical signal to an optical medium.

9. The optoelectronic device of claim 8, wherein the circuit is configured to alter an operation parameter of the optoelectronic device according to information in the identified packets.

10. The optoelectronic device of claim 8, wherein the circuit is configured to alter wavelength of light emitted by the optical subassembly according to the information in the identified packets.

11. The optoelectronic device of claim 8, the circuit is configured to be programmable by instructions contained in the identified data packets.

12. The optoelectronic device of claim 8, wherein the second data stream includes the new data packet to the host device.

13. The optoelectronic device of claim 8, wherein the circuit modifies the first data stream to generate the second data stream.

14. The optoelectronic device of claim 8, wherein the new data packet has a destination address corresponding to a predefined address assigned to the host device.

15. The optoelectronic device of claim 8, wherein the new data packet has a destination address corresponding to a predefined address assigned to a device that generated the identified data packet.

16. The optoelectronic device of claim 8, wherein the optoelectronic device further comprises a local module input/output interface for communicating with another optoelectronic device coupled to said host.

17. An optoelectronic device selected from one of an optoelectronic transceiver, an optoelectronic receiver and an optoelectronic receiver, the device comprising:

a first interface configured to couple to an optical medium to receive an optical signal;

an optical subassembly coupled to the first interface, the optical subassembly configured to convert the optical signal to a first electrical signal comprising a first data stream that includes data packets;

a sensor configured to detect a status of the optoelectronic device and to generate a sensor signal representative of the status;

a circuit coupled to the optical subassembly and to the sensor, the circuit configured to identify a data packet in the first data stream having a packet destination address matching a predefined address assigned to the optoelectronic device, to generate a new data packet containing information associated with the sensor signal in response to the identified data packet, and to generate a second data stream that includes at least a subset of the data packets in the first data stream; and

a second interface configured to couple to a host device and to communicate the second data stream to the host device.

19. The optoelectronic device of claim 18, wherein the circuit is configured to alter an operation parameter of the optoelectronic device according to information in the identified packets.

20. The optoelectronic device of claim 18, wherein the circuit is configured to be programmable by instructions contained in the identified data packets.

21. The optoelectronic device of claim 18, wherein the second data stream includes the new data packet.

22. The optoelectronic device of claim 18, wherein the new data packet has a destination address corresponding to a predefined address assigned to the host device.

23. The optoelectronic device of claim 18, wherein the new data packet has a destination address corresponding to a predefined address assigned to a device that generated the identified data packet.

24. The optoelectronic device of claim 18, wherein the optoelectronic device further comprises a local module input/output interface for communicating with another optoelectronic device coupled to said host.

25. A transceiver configured to couple to a host device, comprising:

a housing;

an optical interface configured to couple to an optical medium to receive and transmit optical signals representative of a first plurality of data packets, said first plurality of data packets including data packets having a host destination address matching a network address of the host device;

a host interface configured to receive and transmit electrical signals to the host device, the electrical signals representative of a second plurality of data packets, the second plurality of data packets including the data packets that have the host destination address; and

control circuitry disposed in the housing and coupled to the optical interface and the host interface, the control circuitry having stored therein a predefined network address that is different from the network address of the host device, wherein the circuitry is configured to identify respective ones of the first and second plurality of data packets having a packet destination address matching the predefined network address and to perform predefined operations according to information in the identified data packets, and wherein the control circuitry is configured to replace the identified data packets with link idle symbols.

26. The transceiver of claim 25, further comprising a sensor for detecting an operating condition of the transceiver and for providing sensed data to the control circuitry, wherein the control circuitry generates a data packet based on the sensed data to be outputted as part of the optical signals.

27. The transceiver of claim 25, further comprising a sensor for detecting an operating condition of the transceiver and for providing sensed data to the control circuitry, wherein

the control circuitry generates a data packet based on the sensed data to be outputted as part of the electrical signals.

28. The transceiver of claim 25, wherein the control circuitry is configured to alter operation parameters of the transceiver according to the information in at least one of the respective data packets.

29. The transceiver of claim 25, wherein the control circuitry is configured to alter wavelength of light emitted by the optical interface according to the information in at least one of the respective data packets.

30. The transceiver of claim 25, further comprising a local module input/output interface for receiving from another device coupled to said host device information associated with an operation condition of the another device.

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